

REMARKS

Claim 1 stands rejected based on U.S. patent number 6,042,556 issued to Beach and others ("Beach").

Beach discloses:

Referring to FIGS. 6 and 7, the transducer array 12 implements a HIFU treatment of a patient's organ 40. An acoustic coupling path 13 is positioned between the patient's skin S and the transducer array 12. The ultrasound energy travels from the transducer elements 32, 34 through the patient's skin S and through various tissues 68 toward the organ 40. The ultrasound energy focuses at the treatment volume 16. In an implementation where bone, air pockets or other ultrasound-opaque regions occur along the path between a transducer elements and the treatment volume, such transducer elements are deactivated as shown in FIG. 7. Specifically, FIG. 7 shows an ultrasound beam which travels through the intercostal regions of a patient's rib cage 72. According to an aspect of this invention, the aperture of the transducer array 12 is controlled so as not to transmit energy through the ultrasound-opaque regions. This is achieved by monitoring the echoes of the transmitted ultrasound burst at each active element. *If the echo amplitude to that element, when gated to the target volume, is below a threshold value, then it is assumed that the path is blocked by an ultrasound-opaque region. Such elements are then deactivated.*

(Col. 7 lines 44 through 64) (Emphasis added).

In contrast to Beach, which uses a volume of an echo amplitude to find a blocked region, amended claim 1 recites "if the reflected portion is received at the transducer within a certain time following transmission of the burst, then analyzing the received reflected portion to detect a disturbance in the transmission path between the transducer and the focal zone," which is neither disclosed nor suggested in Beach. Therefore, applicant submits that claim 1, as amended, is patentable over Beach. Given that claims

2 through 16 depend from claim 1, applicant submits that these claims are also patentable over Beach.

Claim 17 also stands rejected based on Beach. However, Beach does not disclose “the system configured to analyze reflected portions of an ultrasound energy burst received by the transducer within a certain time following transmission of the respective burst and to detect a disturbance in the transmission path between the transducer and the focal zone based on the analyzed portions,” as recited in amended claim 17. Therefore, applicant submits that claim 17, as amended, is also patentable over Beach. Given that claims 18 through 38 depend from claim 17, applicant submits that these claims are also patentable over Beach.

CONCLUSION

If the Examiner has any questions or comments regarding this reply, the Examiner is respectfully requested to contact the undersigned at the number listed below.

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